



## Including urgency in global warming assessment in LCA

Jørgensen, Susanne Vedel; Hauschild, Michael Zwicky; Nielsen, Per Henning ; Kløverpris, Jesper Hedal

*Publication date:*  
2012

[Link back to DTU Orbit](#)

*Citation (APA):*

Jørgensen, S. V., Hauschild, M. Z., Nielsen, P. H., & Kløverpris, J. H. (2012). *Including urgency in global warming assessment in LCA*. Poster session presented at 6th SETAC World Congress 2012, Berlin, Germany.

---

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



# Including urgency in global warming assessment in LCA

Susanne V. Jørgensen<sup>1,2</sup>, Michael Z. Hauschild<sup>1</sup>, Per Henning Nielsen<sup>2</sup>, Jesper Hedal Kløverpris<sup>2</sup>

<sup>1</sup> Department of Management Engineering, Technical University of Denmark (DTU), Lyngby, Denmark

<sup>2</sup> Novozymes A/S

## AIMS

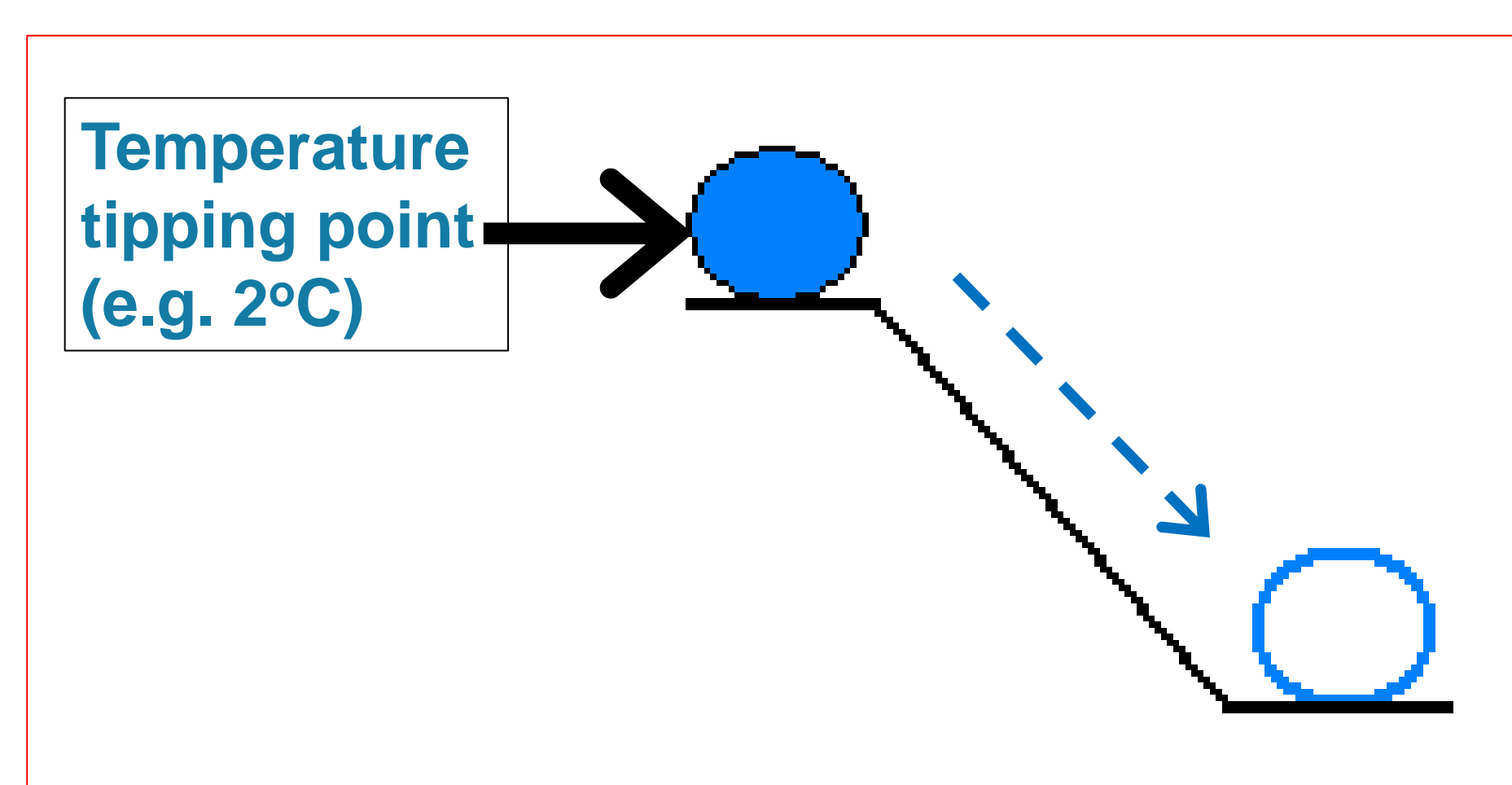
- Address the issue of climatic tipping points, when assessing global warming in life cycle assessment (LCA)
- Address the value of temporary carbon storage in terms of climate change mitigation
  - Introduce additional impact category; a 'climatic tipping potential' (CTP)

## Relevance of new suggested impact category

- Addressing climate change is urgent
  - Temperatures approach critical levels
  - Global warming potential (GWP) does not consider climatic tipping points and urgency of staying below such

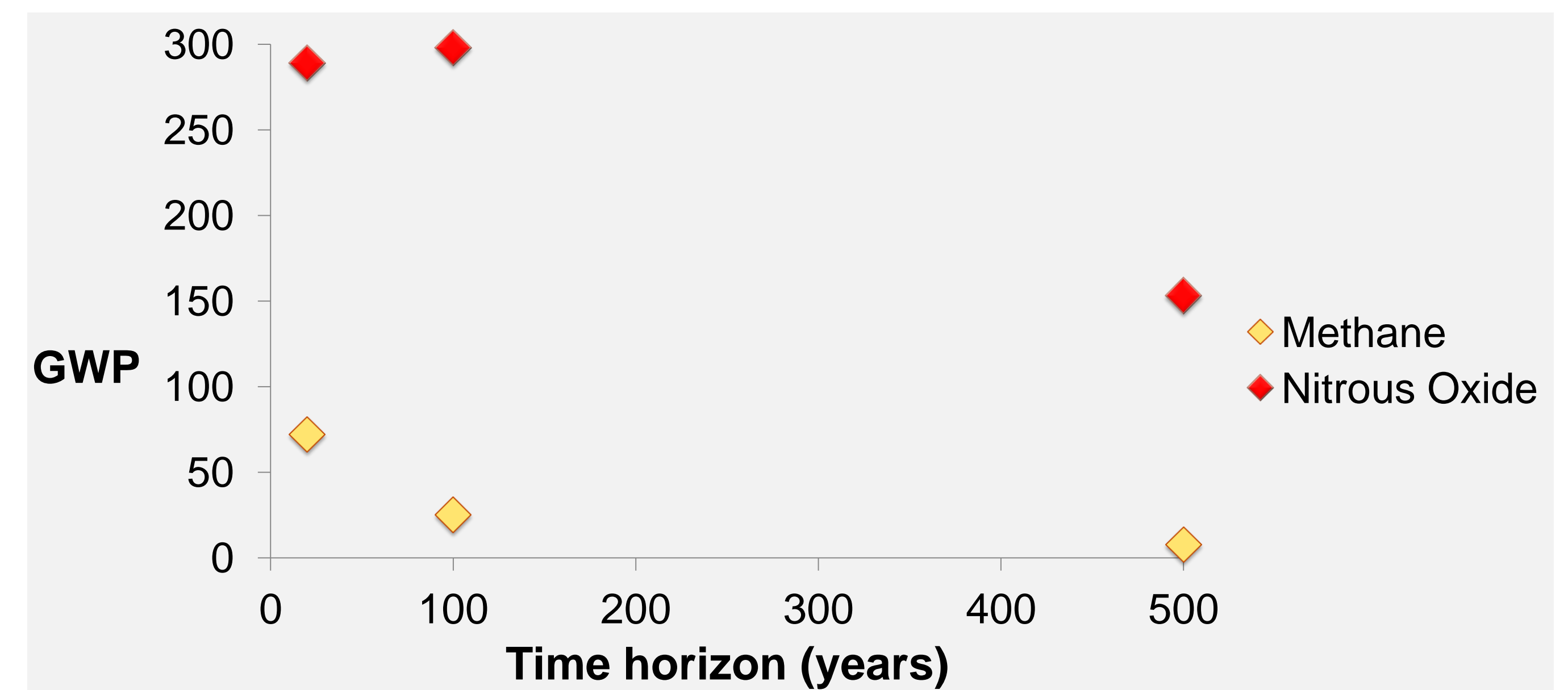
- Crossing climatic tipping points may:
  - Lead to dramatic climate change
  - Be irreversible

(IPCC, 2007)



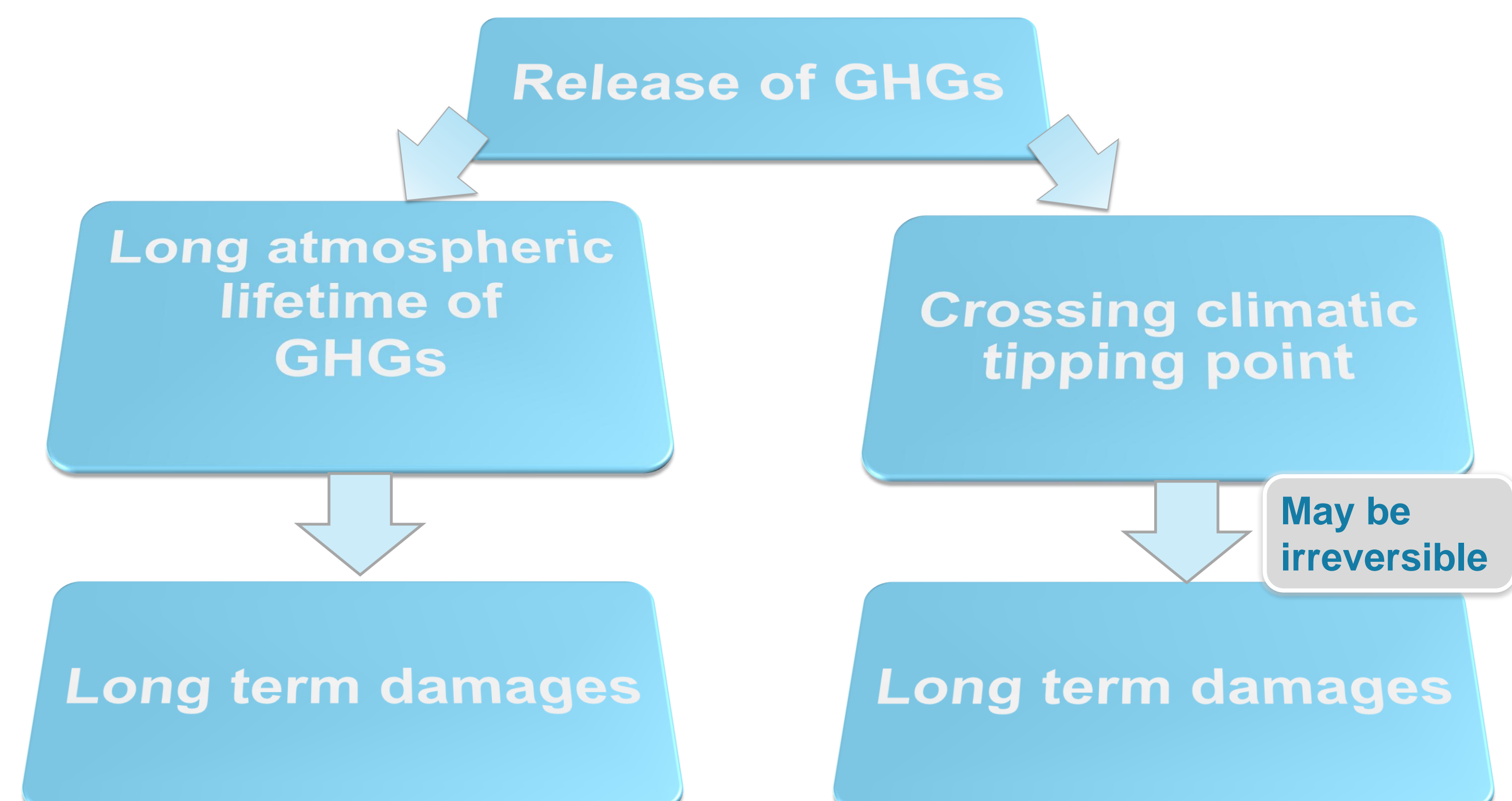
- For urgency of not crossing tipping points temporary carbon storage may be of relevance
- This can be expressed through the CTP impact category
- Alternatives to the GWP have been suggested, but do not cover both long term and urgency aspects of climate change

- Relative impact of GHGs varies with time horizon
  - Not included in GWP – will be included in CTP



Impact of selected GHGs relative to CO<sub>2</sub> depending on time horizon (data for GWP for 20, 100 and 500 years from IPCC (2007))

- Addressing both long term and urgency issues are essential:
  - They represent different aspects of the climate change challenge
  - Both lead to long term damage, but in different ways



## EXPECTED RESULTS

- Enabling:
  - Assessment of GHGs impacts on crossing climatic tipping points
    - Without 'hiding' long term climatic impacts of long-lived GHGs
  - Assessment of climate change mitigation value of temporary carbon storage

## References:

IPCC (2007) *Climate Change 2007 - The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, U.K. and NY, USA, 2007.